IN THE CLAIMS

Please amend the claims as indicated below.

1. (Original) A method of determining an acoustic velocity in a bone, comprising:

transmitting, from a location adjacent a first in-vivo bone, an acoustic wave having a wavelength about the same or smaller than a cross-section of the bone, which cross-section is perpendicular to a main travel direction of said acoustic wave in said bone;

receiving said acoustic wave at a location adjacent a second in-vivo bone; and

determining at least one acoustic characteristic of at least a portion of at least one of the first and second bones, from a travel time of said wave through said first and second bones and at least one joint between said bones,

wherein said acoustic characteristic comprises at least an acoustic velocity.

2. (Original) A method according to claim 1, wherein said locations have an unknown positional relationship.

3. (Original) A method according to claim 1, wherein said locations have a known positional relationship.

4. (Original) A method according to claim 1, wherein said receiving and said transmitting comprise receiving and transmitting using mechanically coupled acoustic elements.

5. (Original) A method according to claim 1, wherein said receiving and said transmitting comprise receiving and transmitting using mechanically uncoupled acoustic elements.

6. (Original) A method according to claim 1, wherein said acoustic wave has a frequency of at least 20kHz.

7. (Previously presented) A method according to claim 1, wherein said acoustic characteristic comprises acoustic velocity.

8. (Previously presented) A method according to claim 1, wherein said acoustic characteristic comprises acoustic attenuation.

9. (Previously presented) A method according to claim 1, wherein said acoustic characteristic comprises polarization properties.

10. (Previously presented) A method according to claim 1, wherein said at least one acoustic characteristic is determined for a plurality of wavelengths, to estimate a frequency dependent variation thereof.

11. (Currently amended) A method according to claim 1, wherein the at least one joint is articulated.

12. (Previously presented) A method according to claim 1, wherein said first and second bones are interconnected by at least a third bone and wherein said at least one joint comprises at least one joint interconnecting said first bone and said at least third bone and at least a second joint interconnecting said at least third and said second bones.

13. (Original) A method according to claim 12, wherein said at least a third bone comprises at least two bones interconnected by a joint, through which the wave travels.

14. (Previously presented) A method according to claim 1, wherein said wave travels between an elbow and a finger.

15. (Previously presented) A method according to claim 1, wherein said wave travels between an elbow and a knuckle.

16. (Previously presented) A method according to claim 1, wherein said wave travels between a knee and an ankle.

17. (Previously presented) A method according to claim 1, wherein said wave travels between a trochanter and a pelvis.

18. (Previously presented) A method according to claim 1, wherein said wave travels between two hips.

19. (Previously presented) A method according to claim 1, wherein said wave travels along a

rib.

20. (Previously presented) A method according to claim 1, wherein said wave travels along a portion of a skull.

21. (Previously presented) A method according to claim 1, wherein said bones comprise spinal vertebra.

22. (Previously presented) A method according to claim 1, wherein receiving the acoustic wave comprises receiving at least a second acoustic wave, which second wave has a path including at least one shared path portion in bone with said first wave.

23. (Original) A method according to claim 22, wherein the two waves are received using a single receiver and are generated at two different locations.

24. (Original) A method according to claim 22, wherein the two waves are received using two receivers and are generated at a single location.

25. (Original) A method according to claim 24, wherein a line interconnecting said two receivers is not parallel to a surface of bone underlying the two receivers.

26. (Previously presented) A method according to claim 22, wherein said travel time comprises a relative travel time of said two waves.

27. (Previously presented) A method according to claim 22, wherein said two waves are generated simultaneously.

28. (Previously presented) A method according to claim 22, wherein said two waves are generated as a single source wave.

29. (Previously presented) A method according to claim 22, wherein said two waves are generated at a time delayed relative to each other.

30. (Previously presented) A method according to claim 1, comprising repeating said

transmitting and said receiving for at least a second acoustic wave, traveling in a direction opposite a traveling direction of said wave, to determine local acoustic bone characteristics at an area which is traversed by both of said waves.

31.-44. (Cancelled)

45. (Withdrawn) A method of bone velocity measurement, comprising:

transmitting at least one acoustic wave into a bone at a first location;

receiving said wave at at least two locations outside said bone, after is passes through said bone, wherein said first location and said at least two locations are not collinear; and

determining a trabecular velocity of said bone from said received wave.

46. (Withdrawn) A method according to claim 45, wherein said bone comprises an ankle bone.

47. (Withdrawn) A method of determining an acoustic velocity in a bone, comprising:

transmitting an acoustic wave from a first location adjacent an in-vivo bone;

receiving said acoustic wave at a second location adjacent the bone, which second location has an unknown positional relationship relative to said first location; and

determining an acoustic velocity of at least a portion of said bone, from a travel time of said wave between said first and said second locations.

48. (Withdrawn) A method according to claim 47, wherein receiving comprises receiving using two receivers.

49. (Withdrawn) A method according to claim 48 and including a difference in time of receipt of the wave by said two receivers, wherein determining comprises determining from said time difference.

50. (Previously presented) Apparatus for determining an acoustic velocity in at least a portion of an in-vivo bone, comprising:

a transmitter for generating acoustic signals;

at least one receiver, mechanically uncoupled from said transmitter during said determining, for receiving said generated acoustic signals after they travel through a bone; and

circuitry for determining an acoustic velocity in said bone responsive to said received

wave.

51. (Previously presented) Apparatus according to claim 50, wherein said circuitry determines said velocity responsive to a relative arrival time of said wave.

52. (Previously presented) Apparatus according to claim 50, wherein said at least one receiver comprises at least two receivers.

53. (Previously presented) Apparatus according to claim 52 and wherein there is a difference in time of receipt of the wave by said two receivers, wherein said circuitry determines said acoustic velocity from said time difference.

54. (Previously presented) A method of determining a characteristic of a bone, comprising:

transmitting, from a location adjacent a first in-vivo bone, an acoustic wave having a frequency of at least 20kHz;

receiving said acoustic wave at a location adjacent a second in-vivo bone; and

determining at least one acoustic characteristic of at least a portion of at least one of the first and second bones, from a travel time of said wave through said first and second bones and at least one joint between said bones.

55. (Previously presented) A method according to claim 54, wherein said acoustic characteristic comprises acoustic velocity.

56. (Previously presented) A method according to claim 54, wherein said acoustic characteristic comprises acoustic attenuation.

57. (Previously presented) A method according to claim 54, wherein said acoustic characteristic comprises polarization properties.

58. (Previously presented) A method according to claim 54, wherein said acoustic characteristics are determined for a plurality